

switching regulator". The Examiner cites U1 in Taylor as a switching regulator. However, U1 in Taylor is switch, not a switching regulator. As is well known in the art, a switching regulator is a type of power supply that, in addition to including a switch, includes components such as an inductor and/or capacitor for smoothing and transforming an input voltage. The switch U1 in Taylor is clearly not a switching regulator. Taylor therefore fails to disclose a switching regulator as recited in claims 1 and 12.

In addition, claim 1 recites "the switching regulator is configured to regulate the supply voltage and to provide a termination voltage to the system memory." Claim 12 recites "providing a termination voltage to system memory". However, Taylor fails to disclose or suggest a switching regulator configured to provide a termination voltage to system memory or providing a termination voltage to a system memory.

For at least the above reasons, independent claims 1 and 12 are not anticipated by Taylor. Since claims 2-11 depends from claim 1 and claims 13-20 depend from claim 12, they too are distinguishable from Taylor for at least the foregoing reasons.

Claim 21 recites "a transistor coupled to the voltage rail and to the shunt regulator, wherein the transistor is configured to turn on in response to the shunt regulator turning on...". However, Taylor discloses "When, at time t1, the supply voltage Vcc has reached a first voltage level V1, the monitor U1 (validly) turns on the transistor Q1..." Therefore, the transistor Q1 is turned on in response to a monitor U1 which is not a shunt regulator. Taylor also discloses "At time T2 the supply voltage Vcc reaches a voltage level V2, and the shunt regulator conducts." (col. 4, lines 24-25). Taylor further discloses "However, the open collector output of the monitor U1, being set to trip at a higher voltage level (v3) will continue to source current, keeping the transistor Q2 from conducting because of the increased voltage drop across R3." Therefore, at time T2, when the shunt regulator in Taylor turns on, the transistor Q2 remains off. Neither transistor Q1 nor transistor Q2 in Taylor is turned on in response to the shunt regulator.

As a result, the cited art fails to disclose or suggest claim 21. Since claim 22 depends from claim 21, it too is patentable for at least the foregoing reasons.

As such, Applicants respectfully requests removal of the 35 U.S.C. § 102(b) rejection.

Section 103(a) Rejection:

The Office Action rejected claims 2 and 13 under 35 U.S.C. § 103(a) as being unpatentable over Taylor in view of Lee et al. (U.S. Patent 5,920,511) (hereinafter "Lee"). The combination of Taylor and Lee does not overcome the deficiencies of Taylor noted above in regard to the independent claims. As such, Applicants respectfully requests removal of the 35 U.S.C. § 103(a) rejections.

CONCLUSION

Applicants submit the application is in condition for allowance, and notice to that effect is requested.

If any extension of time (under 37 C.F.R. § 1.136) is necessary to prevent the above referenced application from becoming abandoned, Applicants hereby petition for such extension. If any fees are due, the Commissioner is authorized to charge said fees to Conley, Rose, & Tayon, P.C. Deposit Account No. 501505/5500-64600/RCK.

Also enclosed herewith are the following items:

- ☒ Return Receipt Postcard
- ☐ Petition for Extension of Time
- ☐ Request for Approval of Drawing Changes
- ☐ Notice of Change of Address
- ☒ Marked-up Copy of Amended Claim

☒ Marked-up Copy of Amended Paragraph

☐ Fee Authorization Form authorizing a deposit account debit in the amount of \$
for fees ().

☐ Other:

Respectfully submitted,



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Date: November 6, 2002

Marked-up Copy of Amended Paragraph beginning on page 10, line 11:

For example, when the switching regulator 255 causes a voltage spike, the voltage on the voltage rail will begin to quickly increase. The clamping circuit 300 may be configured to detect a relatively small increase in the voltage. Thus, at the beginning of the spike, the voltage on the voltage rail may exceed the voltage the detecting stage is configured to detect, causing the detecting stage to activate the clamping stage. When the clamping stage is activated, it begins to reduce the voltage. The clamping circuit [195] 300 may be configured to turn on very quickly, so that the clamping circuit [195] 300 begins reducing the supply voltage contemporaneously with the voltage spike occurring. The clamping circuit [195] 300 may also contain components capable of sinking a significant amount of current to ground. Thus, the clamping circuit [195] 300 can be configured to keep voltage spikes caused by the switching regulator 255 from causing the voltage to exceed the maximum voltage. By doing so, the clamping circuit [195] 300 protects sensitive electrical components dependent on this rail from voltage spikes and other over-voltage conditions. Once the voltage spike has been clamped and the supply voltage returns to its normal level, the clamping circuit may be configured to deactivate the clamping stage.

Marked-up Copy of Amended Claim:

21. A clamping circuit configured to clamp a voltage rail in a computer system comprising:

a voltage divider coupled to the voltage rail and to a shunt regulator, wherein the voltage divider is configured to apply an input voltage to the shunt regulator, wherein the voltage divider is configured so that the input voltage is greater than or equal to a reference voltage level of the shunt regulator when a [voltage rail] voltage on the voltage rail is greater than or equal to a first voltage level, and wherein the voltage divider is configured so that the input voltage is less than the reference voltage level when the [voltage rail] voltage on the voltage rail is less than the first voltage level;

the shunt regulator coupled to the voltage divider, wherein the shunt regulator is configured to turn on when the input voltage is greater than or equal to the reference voltage level and turn off when the input voltage is less than the reference voltage level; and

a transistor coupled to the voltage rail and to the shunt regulator, wherein the transistor is configured to turn on in response to the shunt regulator turning on, wherein the transistor is configured to sink current from the voltage rail when the transistor is on to decrease the [voltage rail] voltage on the voltage rail below the first voltage level, and wherein the transistor is further configured to turn off when the shunt regulator is off.